GLASGOW PHILOSOPHICAL SOCIETY

THE QUARTERLY JOURNAL OF SCIENCE, LITERATURE, AND ART.

JULY TO DECEMBER, 1827.

LONDON:
HENRY COLBURN, NEW BURLINGTON-STREET.

MDCCCXXVII.

UNIVERSITY OF OKLAHOMA
LIBRARY

DeGolyer

505
Q28
new ser
v. 2

CONTENTS.

July—Oct. 1827.

Page

On the Beauties contained in the Ovals and in the Elliptic Curves, both simple and combined, generated from the same Figure or Disk. By R. R. Reinagle, Esq., R.A. 1

On the Art of forming Diamonds into single Lenses for Microscopes. By Mr. A. Pritchard. 15

Analysis of a newly-discovered Spring, at Stanley, near Wakefield. By Mr. William West. 21

Observations on the State of Naval Construction in this Country. 25

On Malaria. No. II. By Dr. Mac Culloch, M.D., F.R.S., &c. 39

Dr. Turner's *Elements of Chemistry*, reviewed 60

Experiments on Audition. Communicated by Mr. C. Wheatstone. 67

On the Petromyzon Marinus 72

Observations upon the Motion of the Leaves of the Sensitive Plant 76

Experiments on the Nature of Labarraques' Disinfecting Soda Liquid. By M. Faraday, F.R.S., Cor. Mem. Roy. Acad. Sci. Paris, &c. 84

Hieroglyphical Fragments, with some Remarks on English Grammar. In a Letter to Baron William Von Humboldt. By a Correspondent 92

Dr. Mac Culloch's '*Malaria; an Essay on the Production and Propagation of this Poison*,' reviewed 100

Account of a New Genus of Plants, called *Reevesia*. By J. Lindley, Esq., F.L.S., &c. &c. 109

Astronomical and Nautical Collections.

i. Fresnel on the Undulatory Theory of Light 113
ii. Rule for the Correction of a Lunar Observation. By Mr. W. Wiseman, of Hull 135

'*De l'Influence des Agens Physiques sur la Vie*. Par W. F. Edwards, D.M.' &c., reviewed 137

Account of Professor Carlini's Pendulum Experiments on Mont Cenis 153

Analysis of the '*Transactions of the Horticultural Society*, Vol. vii. Part I.' 159

On the Recent Elucidations of Early Egyptian History . . 176

MISCELLANEOUS INTELLIGENCE.

I. Mechanical Science.

Page
1 On the Combined Action of a Current of Air, and the Pressure of the Atmosphere 193
2 Considerations relative to Capillary Action 194
Page
3 Novel Use of the Plough 197
4 Discovery of Rocks under the Surface of the Sea 198
5 Paper to resist Humidity .... *ib.*
6 Professor Amici's Microscopes *ib.*

DeGolyer

CONTENTS.

II. Chemical Science.

Page
1 On the Specific Heat of Gases 200
2 On the Incandescence & Light of Lime 201
3 Evolution of Heat during the Compression of Water *ib.*
4 On Electrical Excitation *ib.*
5 Magnetic Repulsion 202
6 Diminished Solubility of Substances by Heat *ib.*
7 Composition of Cyanic Acid 203
8 Iodous Acid 204
9 Manganesic Acid *ib.*
10 Heavy Muriatic Ether, and Chloric Ether *ib.*
11 Test for the Presence of Nitric Acid 205
12 Peculiar Formation of Nitre *ib.*
13 Experiments on Fluoric Acid and Fluates *ib.*
14 Crystallization of Phosphorus 206
15 Solution of Phosphorus in Oils *ib.*
16 On the Inflammation of Powder, when struck by Brass 207
17 Cementation of Iron by Cast Iron *ib.*
18 On the Preparation of Ferroprussiate of Potash *ib.*
19 Sulphocyanide of Potassium in Saliva 208
20 Decomposition of Sulphate of Copper, by Tartaric Acid *ib.*
21 Separation of Arsenic from Nickel, or Cobalt 209
Page
22 Chemical Researches into Certain Ancient Substances 209
23 Compounds of Gold 210
24 On the Bitter Substance produced by the Action of Nitric Acid on Indigo, Silk, and Aloes *ib.*
25 On the Existence of Crystals of Oxalate of Lime in Plants 214
26 Fallacy of Infusion of Litmus as a Test *ib.*
27 Tests for the Natural Colouring Matter of Wine 215
28 Test of the Presence of Opium *ib.*
29 Denarcotized Laudanum *ib.*
30 Extraction of Morphia from Dry Poppy Heads 216
31 Preparation of Morphia *ib.*
32 Easy Method of Obtaining Meconic Acid 217
33 On a New Vegetable Acid *ib.*
34 Altheine, a New Vegetable Principle *ib.*
35 Rheine, a New Substance from Rhubarb 218
36 On Dragon's Blood, and a New Substance which it contains *ib.*
37 Purification of Madder 219
38 On Indigo, and Indigogene 220
39 On the Mutual Action of Ethers, and other Substances 221
40 Faraday's *Chemical Manipulation* *ib.*

III. Natural History.

1 On the Supposed Influence of the Moon 222
2 Luminous Appearances in the Atmosphere *ib.*
3 On the Determination of the Mean Temperature of the Air 223
4 Indelible Writing *ib.*
5 Peculiar Crystals of Quartz *ib.*
6 Native Iron not Meteoric 224
7 Native Argentiferous Gold 225
8 Prothéeïte, a New Mineral 226
9 Volcanic Bisulphuret of Copper *ib.*
10 Fall of the Lake Souwando, in Russia 227
11 Vegetable Torpor in the Root of the Black Mulberry Tree 228
12 Method of increasing the Odour of Roses *ib.*
13 Pine Apples *ib.*
14 Mode of Condensing Vegetable Substances for Ship's Provisions 229
15 Rewards for the Discovery of Quinia, and for Lithotrity *ib.*
16 Upon the Gaseous Exhalations of the Skin 230
17 Effects of Galvanism in Cases of Asphyxia by submersion *ib.*
18 Recovery from Drowning 231
19 Preservation of Cantharides *ib.*
20 Chloride of Lime in cases of Burns *ib.*
21 Cure of Nasal Polypi 232
22 Bite of the Viper *ib.*
23 Experiments on the Poison of the Viper *ib.*
24 Destruction of Moles *ib.*
25 On growing Salad Herbs at Sea 233
26 Chinese Method of Fattening Fish 234

CONTENTS.

Page

On the Means generally used with the Intention of curing a Stoop. By the late Mr. **Shaw** 237

A Critique on the Aplanatic Object-glasses, for diverging Rays, of Vincent Chevalier, ainé et fils. By C. R. **Goring**, M.D. . 248

On the Existence of Chlorine in the Native Black Oxide of Manganese. By **John M'Mullen**, Esq. 258

Modern Improvements of Horticulture . . 261

Faraday's *Chemical Manipulation*, reviewed 275

Statistical Notices suggested by the actual State of the British Empire, as exhibited in the last Population Census. Communicated by Mr. **Merritt** 283

On the Modern Ornaments of Architecture, &c. 292

De l'Influence des Agens Physiques sur la Vie. Par W. F. **Edwards**, D.M. &c., reviewed 296

Experiments on Thought 308

Hieroglyphical Fragments, illustrative of Inscriptions preserved in the British Museum, with some remarks on Mr. Champollion's opinions. In a letter to the Cav. San Quintino . . 310

On the Naturalization of Fish. By J. **Mac Culloch**, M.D., F.R.S., &c. 320

Wadd's *Nugæ Chirurgicæ, or, a Biographical Miscellany*, reviewed 329

Nugæ Canore, by **Unus Quorum**, reviewed . . . . . *ib.*

Wadd's *Mems., Maxims, and Memoirs*, reviewed . . . . *ib.*

On Tic Douloureux 346

Remarks on some Quadrupeds supposed by Naturalists to be extinct. By **John Ranking**, Esq. 350

Page

Description of a cheap and portable Instrument for enabling Young People to acquire a knowledge of the Stars, or determine their situation in the Heavens. By S. LEE, Esq. . 371

CARUS'S *Introduction to the Comparative Anatomy of Animals*, reviewed 377

Comparative Value of the principal Varieties of Fuel, &c., by MARCUS BULL, reviewed . . . . *ib.*

DANIELL'S *Meteorological Essays and Observations*, reviewed . *ib.*

Philosophical Transactions of the Royal Society for 1827, reviewed . . . . *ib.*

Practical Treatise on the use of the Blowpipe, by J. GRIFFIN, reviewed . . . . *ib.*

Circle of the Seasons, and Practical Key to the Calendar and Almanack, reviewed . . . . *ib.*

Conversations on the Animal Economy—reviewed . . . . *ib.*

Notice of a New Genus of Plants discovered in the Rocky Mountains of North America by Mr. DAVID DOUGLAS. By JOHN LINDLEY, Esq. 383

A Description of the Aurora Borealis seen in London on the Evening and Night of the 25th of September, 1827, with Critical Remarks, &c. By E. A. KENDALL, Esq., F.S.A. . 385

Proceedings of the Royal Society 424

Proceedings of the Horticultural Society 425

ASTRONOMICAL AND NAUTICAL COLLECTIONS

- i. Ephemeris of the periodical Comet for its Return in 1828, computed with the consideration of a resisting Medium. By Professor ENCKE 428
- ii. Elementary View of the undulatory Theory of Light. By Mr. FRESNELL 431
- iii. Remarks on the action of Corpuscular Forces. In a letter to Mr. POISSON 448
- iv. Calculations of Lunar Phenomena. By THOMAS HENDERSON, Esq. 450

MISCELLANEOUS INTELLIGENCE.

I. Mechanical Science.

Page
1 On the Adhesion of Screws .. 453
2 Improvement in Steam-engines *ib.*
3 Improved Clock 454
4 Method of dividing Glass by Friction .... *ib.*
5 Use of Soapstone in diminishing Friction 455
6 On peculiar Physical Repulsions .... *ib.*
7 On the Magnetic Effects of Metals in Motion 456
8 Duration of the Effects of Light upon the Eye 457
9 On the Measurement of the Intensity of Light .... *ib.*
Page
10 On the apparent Decomposition of White Light by a Reflecting Body when in Motion .. 458
11 On the Barometer .... *ib.*
12 Easy method of reducing Barometrical Observations to a Standard Temperature .... *ib.*
13 Diamond Lenses............ 459
14 Sapphire Lenses for Single Microscopes .... *ib.*
15 On a Method of securing and Preserving the Rowing Pins in Boats 460
16 Cold Injection for Anatomical Preparation 461

II. Chemical Science.

1 Extraordinary Experiments on Heat and Steam.......... 461
2 On the Use of feeble Electric Currents, for effecting the Combination of numerous Bodies 462
3 Crystallization of Metallic Oxides 465
4 On Bromine .... *ib.*
5 Elementary Nature of Bromine *ib.*
6 Quantity of Bromine in Sea-Water 466
7 Sale of Bromine .... *ib.*
8 Preparation of Iodous Acid .. *ib.*
9 On a peculiar Nitric Acid, and Sulphate of Potash........ 467
10 On certain Properties of Sulphur 468
11 On the Fluidity of Sulphur and Phosphorus at common temperatures 469
12 Separation of Selenium from Sulphur 470
13 On a new Compound of Selenium and Oxygen—Selenic Acid 471
14 Preparation of Hyposulphuric Acid 473
15 Singular Habitude of Phosphoric Acid with Albumen 473
16 Economical Preparation of Deutoxide of Barium 474
17 Preparation of Aluminum—Chloride of Aluminum .... *ib.*
18 Mutual Action of Lime and Litharge 475
19 New Chloride of Manganese discovered .... *ib.*
20 Preparation of pure Oxide of Zinc 476
21 Deuto-Sulphuret of Cobalt.... *ib.*
22 Separation of Bismuth from Mercury by Potassium .... *ib.*
23 Sulphuret of Arsenic proportionate in Composition to Arsenic Acid .... *ib.*
24 New Double Chromates 477
25 Dobereiner's finely divided Pla- 477 tina ....
26 New Metals 478
27 Analysis of Porcelain Pottery, &c. .... *ib.*
28 On the Composition of simple Alimentary Substances 480
29 Preparation of Sulphate of Quinia and Kinic Acid, without the use of Alcohol 482
30 Pure Narcotine prepared 483
31 Uncertain Nature of Jalapia .. *ib.*
32 Preparation of pure Mellitic Acid
33 On a New Acid existing in Iceland Moss 484
34 Remarks on the Preparation of M. Gautier's Ferro-prussiate of Potash, as described in this Journal for July, 1827 .. *ib.*

III. Natural History.

Page
1 Squalls of Wind on the African Shores 486
2 Destruction of an Oak by Lightning 487
3 Description of a Meteoric Fire-Ball seen at New Haven .. ib.
4 Remarkable Meteoric Phenomenon 488
5 Aurora Borealis seen in the Day-time at Cannonmills .. 489
6 Aurora Borealis in Siberia.... ib.
7 On the Presence of Ammonia in Argillaceous Minerals .. ib.
8 Composition of Apatite 490
9 Burmese Petroleum Wells .... ib.
10 Direction of the Branches of Trees .... ib.
11 Effects of Light on Vegetation . ib.
12 Organization and Reproduction of the Trufle 491
13 Alteration of Corn in a subterraneous Repository 492
14 Quick Method of putting Insects to Death 493
15 Destruction of Snails by common Salt .... ib.
16 Remarkable Hairy Man .... ib.
17 Application of Remedies by Absorption from the Surface ib.
18 On the Strix Cunicularia, or Coquimbo Owl 494
19 Naturalization of Fish 496
20 Mode of keeping Apples .... ib
21 On the Cultivation and Forcing of Sea Kale 497

Meteorological Table 500

TO OUR READERS AND CORRESPONDENTS.

The drawings, illustrating the construction of a Blow-pipe, are not sufficiently accurate to enable us to publish them. Our Correspondent will observe that we have noticed another part of his letter.

We regret that we are unable to offer our Correspondent, upon the subject of *Gas Works*, any precise information. There can be no doubt that an atmosphere tainted by coal gas is injurious to animal and vegetable life, but much will depend upon the extent of the contamination, and other causes, of which our limits prevent mention. To say nothing of danger from fire and from explosion, it has always been matter of surprise to us that gas-works are tolerated by the government in close and confined situations—that the Thames is suffered still to be polluted with their offal, and that they are sometimes placed close by the road side, (as at Brentford,) to the nuisance of every one who passes. These matters want looking into.

Q. will find an answer to his question, in the "Gazette of Health" for last July.

F. R. S. must remain unanswered till after St. Andrew's Day.

Dr. Heinecken's paper is disposed of as he desired.

Mr. Brande and Mr. Faraday wlll commence their Lectures and Demonstrations in Theoretical and Practical Chemistry, in the Laboratory of the Royal Institution, *on Tuesday, the 9th of October*, at Nine in the Morning precisely. Further particulars, and a Prospectus, may be obtained at the Royal Institution, 21, Albemarle-street, or by application to the Lecturers.

In the Press—A Collection of Chemical Tables, for the use of Students, in Illustration of the Theory of Definite Proportionals, in which are shewn the Equivalent Numbers of the Elementary Substances, with the Weights and Volumes in which they combine, together with the Composition of their most important Compounds, and the Authorities for their Analysis. By William Thomas Brande.

TO OUR READERS AND CORRESPONDENTS.

The pages of this Journal are impartially open to all communications upon the subjects of Science, Scientific Literature, and the Arts: it is requested they may be forwarded to the Editor one month previous to the publication of each number.

We shall be happy to receive papers from Provincial Scientific Societies, and to publish them either on the part of the Society, or of their respective authors.

Papers deemed unfit for this publication, will be immediately returned to the source whence we received them, with our reasons for their return.

The letters signed B. and T. R. S. we have thought it prudent to suppress for the present.

Several books have reached us for notice in this Journal; but unless they are sent earlier in the Quarter, we cannot insure attention to them.

We have been favoured with communications from Mr. Swainson, Dr. Littledale, Mr. Rose, and E. Z., which we are obliged to postpone.

A letter from a "Member of the Zoological Society," reached us too late for the purpose it was intended to answer. We fear we shall not agree with him in opinion, but perhaps his *second communication* may clear up the difference.

We presume that "A Mechanic" will find the information he requires in Mr. Farey's account of the Steam Engine.

"An old Subscriber" is much in error—the *proceedings* he alludes to are copiously given in contemporary monthly publications; if therefore we followed his advice, our information would be stale. The motives he alludes to are out of the question.

We cannot give "A Vapourer" any authentic information respecting the Steam Carriage, nor do we hear that the Gas Engine has advanced.

ROYAL INSTITUTION OF GREAT BRITAIN,

Albemarle Street, *December* 3, 1827.

A COURSE OF SIX ELEMENTARY LECTURES ON CHEMISTRY, adapted to a Juvenile Audience, will be delivered during the Christmas Recess, by Michael Faraday, F. R. S., Corr. Mem. Roy. Acad. Sciences, Paris; Director of the Laboratory, &c. &c.

The Lectures will commence at Three o'Clock.

Lecture I. Saturday, December 29. Substances generally—Solids, Fluids, Gases—Chemical affinity.

Lecture II. Tuesday, January 1, 1828. Atmospheric Air and its Gases.

Lecture III. Thursday, January 3. Water and its Elements.

Lecture IV. Saturday, January 5. Nitric Acid or Aquafortis—Ammonia or Volatile Alkali—Muriatic Acid or Spirit of Salt—Chlorine, &c.

Lecture V. Tuesday, January 8. Sulphur, Phosphorus, Carbon, and their Acids.

Lecture VI. Thursday, January 10. Metals and their Oxides—Earths, Fixed Alkalies and Salts, &c.

Non-Subscribers to the Institution are admitted to the above Course on payment of One Guinea each; Children, 10*s.* 6*d.*

The Weekly Evening Meetings of the Members of the Royal Institution will commence for the ensuing Season, on Friday the 25th of January, 1828, at half past Eight o'Clock, and will be continued on each succeeding Friday Evening, at the same hour, till further notice.

The Lectures will commence for the Season on Saturday the 2d of February, at Three o'Clock, by Wm. Thos. Brande, Esq., F.R.S. Lond. and Edin., Prof. of Chemistry in the Royal Institution.

The Library of the Royal Institution is open for the use of the Members and Subscribers every day on which the House of the Institution is open; in Winter from Ten till Four, and from Seven till Ten in the Evening; and in Summer from Ten till Five, and from Seven till Ten in the Evening.

Mr. Brande and Mr. Faraday will commence the Spring Course of their Chemical Lectures and Demonstrations, in the Laboratory of the Royal Institution, on Tuesday, the 12th of February, at Nine in the morning precisely. A Prospectus may be obtained at the Institution, or of the respective Lecturers.

In the Press, and nearly ready for publication,

A COLLECTION OF CHEMICAL TABLES, for the use of Practical Chemists and Students, in Illustration of the Theory of Definite Proportionals; in which are shewn the Equivalent Numbers of the Elementary Substances, with the Weights and Volumes in which they combine; together with the Composition of their most important Compounds, and the Authorities for their Analysis.

By William Thomas Brande.